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Cow Infertility, Herd Size and Climate

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Annual percentages of successful A.I. from 23 centres in England and Wales were examined for the period April 1963 - March 1966.

Herd sizes during 1963 were calculated from the registered number of dairy producers and the number of cows in milk in the dairy herd obtained from the MAFF June returns (on a county basis).

Estimates of non-growing days of grass during the summer due to soil moisture deficits exceeding 2 inches in the top layers of soil, were calculated for the stations used in Tech Bull No 24, - (called dry-days).

Averages of herd size and dry days were found for each A.I. centre area by appropriate weighting from the above data. The results were, averaged over 3 years:-

<u>Centre</u>	<u>A.I. success rate</u>	<u>Dry-Days</u>	<u>Herd Size</u>
Llangefni	80.1	2	11
Ruthin	79.5	11	15
Burley	79.1	16	18
Penrith	78.5	5	22
York	78.3	16	26
Welshpool	78.1	13	19
Whalley	77.6	16	21
Carmarthen	77.4	11	15
Felin Fach	77.3	7	13
Buxton	77.3	14	21
Torrington	76.9	13	16
Cheswardine	76.2	26	24
Sturminster	75.8	38	35
Gloucester	75.6	24	28
Tarporley	75.5	23	28
Tean	75.5	31	22
Praze	75.4	29	14
Sutton Bonington	74.6	42	22
Little Horwood	74.5	36	25
Clyst Honiton	74.5	41	16
Beccles	73.7	41	27
Whiligh	73.2	34	31
Writtle	71.7	49	37

The correlation between A.I. success and dry-days is - 0.88

A.I. success and herd size is - 0.69

Herd size and dry days are correlated 0.64. (Size of farm is highly correlated with a dryness factor in climate)

Partial correlations show:-

A.I. success on dry-days (herd size eliminated) -0.78

A.I. success on herd-size (climate eliminated) -0.36

This suggests that herd size and consequent husbandry efficiency is not the dominant factor.

Therefore it is reasonable to search for a cause of the variations of A.I. success in terms of something dependent on the dryness of the climate.

Any comments or suggestions on this paper should be referred to the author.

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